

ABSTRACT

The research location is geographically located at coordinates $01^{\circ} 33'36''$ N and $102^{\circ} 14'06''$ E, administratively belongs to the Bengkalis Island region, Selat Baru District Bantan, Bengkalis District, Riau Province. Bengkalis Island is an area immediately adjacent to the sea, the geographical conditions of the region make Bengkalis have various problems concerning the availability of clean water. The research objective was to determine the geological conditions of the research area in general to observe directly lithology field, Measuring the groundwater level by modeling the measurement of open well or artesian wells, Mapping the condition of groundwater level by analyzing the water level in the well to the altitude / elevation, and make a map of the distribution of groundwater quality based on parameters of smell, taste, color, and the feasibility parameters according to Health Minister regulatory research area. The method used for the analysis of general geology, groundwater conditions and analysis of groundwater quality by direct measurement of groundwater resources and using a YSI-Pro 1030 Water Quality Instrument to analyze the quality of groundwater. General geological analysis includes mapping geomorphology and lithological mapping types. While groundwater quality analysis includes an analysis of smell, taste, color, and the feasibility parameters according to Health Ministry regulations. Results study geomorphological analysis concludes that the condition of the landscape are classified into two units geomorphology and geomorphological alluvial plain sloping slightly sloping alluvial plain. Lithologies classified into alluvial-old Young Holocene. Fluvial depositional environment is inferred. The results of the analysis of groundwater quality research areas based on parameters of taste, color, smell, temperature, pH, DHL, and TDS in the analysis pitch can 46 wells unfit for consumption and 14 wells are less suitable according to the Ministry of Health.

Keyword : Geology, Groundwater, Geochemistry, groundwater quality, Bengkalis,